Best Management Practices (BMP) Plan

For the

Velella Epsilon Project –

Pioneering Offshore Aquaculture in the Southeastern Gulf of Mexico

NOAA Sea Grant 2017 Aquaculture Initiative

OCEAN ERA

Submitted to:

U.S. Environmental Protection Agency (EPA) Region 4
National Pollutant Discharge and Elimination System (NPDES)
Permitting and Enforcement Branch

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Best Management Practices (BMP) Plan

Facility Name: Velella Epsilon Project

Prepared Date: 19 September 2020

NPDES Permit No.: FL0A00001

Facility Manager: Dennis Jay Peters

1.0 Facility / Project Description

The Velella Epsilon Project proposes to validate the feasibility of a temporary, small-scale, demonstration net pen to stock, culture, and harvest a Federally managed species (Almaco jack; *Seriola rivoliana*); conduct environmental monitoring – water quality and benthic analyses per EPA & USACE requirements; and address public concerns of open ocean aquaculture in the Gulf of Mexico (Gulf) by (1) demonstrating FAD effects to GOM fishing communities; and addressing public concerns of open ocean aquaculture in the GOM by (2) encouraging the public and tourists to visit the demonstration site.

1.1 Species / Annual Production:

The project will culture a single cohort of approximately 20,000 fish (Kampachi; *Seriola rivoliana*) which will be reared for approximately 12 months. The estimated final fish size is approximately 4.4 pounds (lbs.) (2 kilograms [kg]), meaning the total maximum harvest weight is estimated to be approximately 88,000 lbs. (39,916 kg). The maximum amount of feed is estimated to be 27,268 lbs. (12,369 kg) per month.

1.2 Net Pen Array Configuration / Operation:

The Velella Epsilon Project will utilize a single PolarCirkel-style net pen array that consists of an offshore-strength submersible circular cage with a diameter of approximately 17 meters and a depth of 7 meters, contained within a high-density polyethylene frame. The submersible net pen will be deployed on an engineered multi-anchor swivel (MAS) mooring system. The engineered MAS will have up to three anchors for the mooring, with a swivel and bridle system. The net pen array utilizes embedment-type anchor mooring; and is serviced by a tender vessel/feed barge tethered to side of net pen system. The cage material for the proposed project is constructed with rigid and durable materials (copper mesh net). The mooring lines for the proposed project will be attached to a floating cage that will rotate in the prevailing current and/or wind direction. The ocean currents and/or winds will maintain the mooring rope and chain under tension during most times of operation.

The cage design is flexible and self-adjusts to suit the constantly changing wave, wind, and current conditions. As a result, the system can operate floating on the ocean surface or submerged within the water column of the ocean. When a storm approaches the area, the entire cage array can be submerged by using a valve to flood the floatation system with water. A buoy remains on the surface, marking the net-pen's position and supporting the air hose. When the pen approaches the bottom, the system can be maintained several meters above the sea floor. The cage system is still able to rotate around the MAS and adjust to the currents while it is submerged. After storm events, the cage system is made buoyant to resume normal operational conditions. The net pen array is estimated to be constructed and deployed in the January 2021 timeframe.

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1.3 Location:

The Velella Epsilon Project is located in the Gulf in approximately 40m water depth off southwest Florida, generally located 45 miles southwest of Sarasota, Florida. **Figure 1** provides the location of VE Project demonstration farm site. The VE Project location was originally sited by conducting a geophysical baseline survey of the proposed area, and whose data were ultimately summarized, reorganized, and augmented to fulfil the requirements of the ***Baseline Environmental Survey Guidance and Procedures for Marine Aquaculture Activities in U.S. Federal Waters of the Gulf of Mexico, October 24th, 2016***.

The overall area is defined as approximately 1.3 x 1.3 nautical miles (nm; 1.7-square nm-site area). Water depths across this area ranged from a minimum depth of 38.3m to a maximum depth of 42.6m. The net pen array will be placed within a subset of that area that contains unconsolidated sediments that are approximately 3 to 10 ft deep. VE Project engineers will ultimately select a specific location within that area based on a diver-assisted assessment of the sea floor when the cage and MAS are deployed. The proposed action area is 3,281 feet (1,000 m) radius measured from the center of the MAS.

Table 1. Target Area with 3' to 10' of Unconsolidated Sediments

Location	Latitude	Longitude
Upper Left Corner	27° 7.70607' N	83° 12.27012' W
Upper Right Corner	27° 7.61022' N	83° 11.65678' W
Lower Right Corner	27° 6.77773' N	83° 11.75379' W
Lower Left Corner	27° 6.87631' N	83° 12.42032' W

1.4 Outfall / Discharge Points:

The Velella Epsilon Project effluent (outfall) is considered to be immediately downstream of the midpoint of the net pen cage with the exact geographical location changing as the cage moves with the current. As the net pen array is on a multiple anchor swivel-point (MAS-point) mooring system, the net pen will continuously seek an oriented positioning that is in line with the predominate directional force of the wind (down-wind) and/or current (down-current).

1.5 Water Source / Receiving Water Body Description

Effluent from the Velella Epsilon Project will discharge into Federal waters of the Gulf approximately 45 miles (72 km) southwest of Sarasota, Florida. For Clean Water Act (CWA) purposes, Federal waters in the Gulf extend seaward from the three nautical mile boundary of each Gulf coastal state, to 200 miles offshore. In the vicinity of the Velella Epsilon Project, the Gulf is not considered an impaired water pursuant to CWA § 303(d) and is not subject to any total maximum daily load.

Winter months are dominated by south-southwest currents, while spring months are dominated by a north-north east current. The overall current flow direction off the west Florida coast is predominately in the south-southwest direction. More information about the receiving water body characteristics can be found in the Ocean Discharge Criteria (ODC) Evaluation that is included in the Environmental Assessment (EA).

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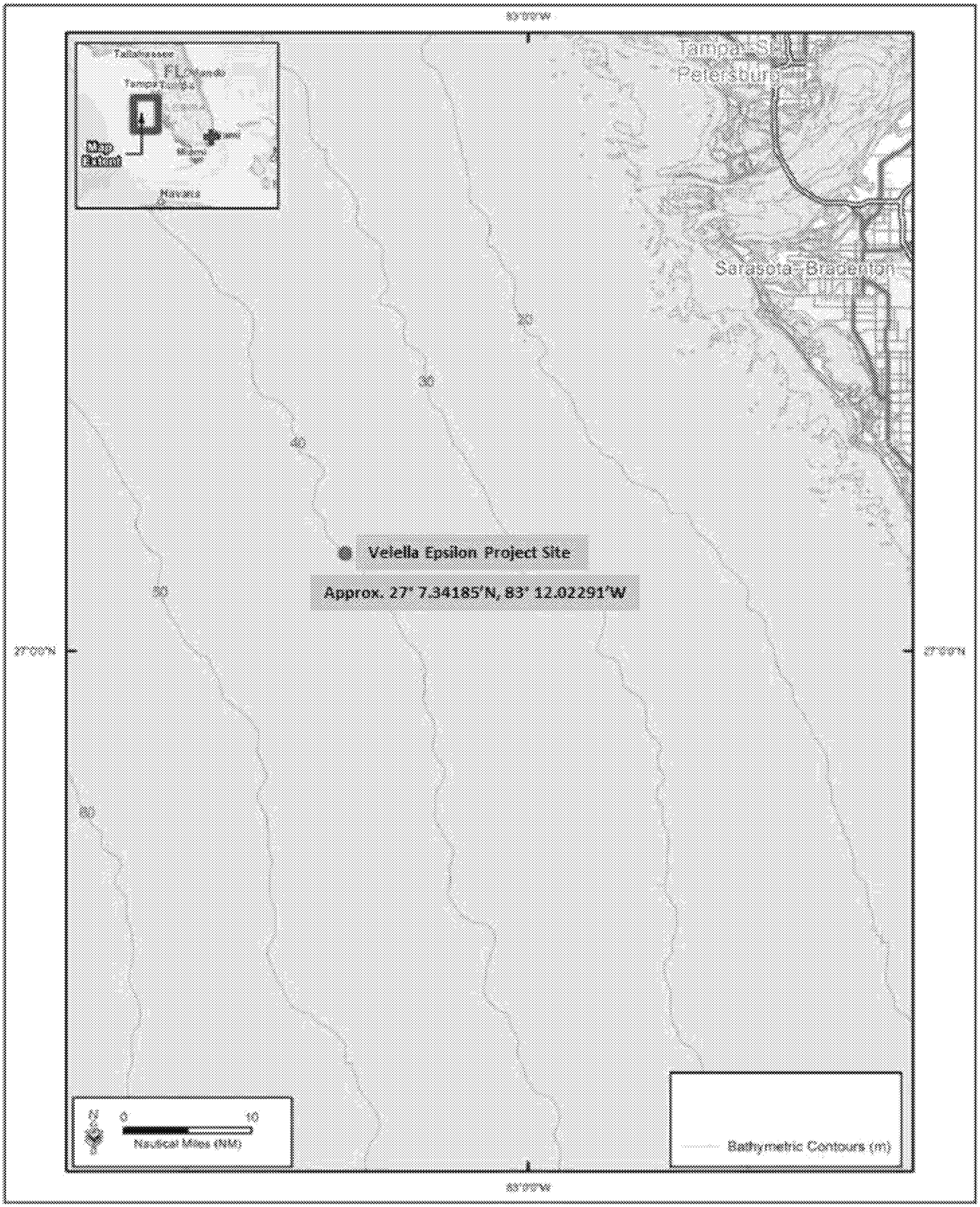

Figure 1. Velella Epsilon Project Site Location

For marine waters off the coast of Florida, Florida's water quality standards apply within three nautical miles off the shore. At present, there are no legally applicable water quality standards that apply for Federal waters in the Gulf. CWA § 304 requires the EPA to develop aquatic life criteria that accurately reflects the latest scientific knowledge of the impact of pollutants on human health and the environment. Aquatic life criteria are designed to protect both freshwater and saltwater organisms from short-term and long-term exposure and are based on how much of a chemical can be present in surface water before it is likely to harm plant and animal life. The EPA has established recommended marine aquatic life criteria. The CWA § 304(a) recommended criteria are not laws or regulations; they are guidance for states and tribes to use for their waters when developing water quality standards.

1.6 Treatment System Used

As an offshore operation, no manmade-implemented treatment system is employed, as the net pen system and husbandry management rely solely on the tremendous assimilation efficiency of the Gulf of Mexico. These oligotrophic oceanic waters, along with steady currents and sufficient depth sustain an increased carrying capacity for nutrient assimilation and ensure that the farm operation functions as a managed balance of nutrient sources of fertilization, rather than point sources of pollution.

- The Velella Epsilon Project exacted appropriate decision criteria during the site selection evaluation process to ensure minimization and reduction of risks associated with potential net pen environmental impacts, and to optimize fish health and performance.

BMPs designed for optimal management and robust monitoring actions that support the efficient nutrient assimilation of the Gulf of Mexico are outlined in Sections 5.0 and 6.0 of this plan.

2.0 Material Storage

Although the use of drugs are not anticipated during offshore net pen farming operations, the Velella Epsilon Project will ensure proper storage of drugs, pesticides, and feed to prevent spills that may result in the discharge to waters of the United States. Onsite personnel are committed to the following:

- Only U.S. Food and Drug Administration (FDA) "Approved Drugs for Use in Aquaculture" (July 2020) will be considered.
- Drugs will be stored in closed cabinets (refrigerated or dry, as appropriate) within the cabin storage hold areas of the onsite tender vessel.
- Only applicable and approved (drugs) quantities of any materials will be taken from the storage hold area at any single time and appropriately transferred outside of the tender vessel cabin for use.
- Maintain records of all drug, pesticide, and other chemical applications including date and time of application and the quality of the drug or chemical used.
- Maintain the facility, its support craft, and storage facilities in clean and tidy condition to minimize the possibility of accidents and spills of feed, petroleum products, and other hazardous materials in the operation of the facility.
- Conduct periodic inspection, cleaning, and maintenance of the facility, and its support craft.

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- Develop a list of appropriate agencies to contact in the event of a spill that includes, but is not limited to, the EPA, U.S. Army Corps of Engineers, and National Marine Fisheries Service.

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  Senior Regional Aquaculture Coordinator,
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- Provide and always have on-hand absorbent materials and appropriate tools in enough quantities to contain and collect chemicals spilled at the facility, on its support craft, and in shore-based storage facilities.

The Velella Epsilon Project personnel will implement procedures to properly prevent, control, clean, dispose and/or treat spills and unplanned discharges of chemicals and other hazardous materials. Onsite personnel are committed to the following:

- Traditional industry measures will be taken for storing, transferring, handling, using, and disposing of chemicals.

- Provide a complete and up-to-date list of all chemicals and other hazardous materials stored at the facility.

  - Marine engine fuel, oil, and lubricants
  - Diesel engine fuel, oil, and lubricants
  - Biodegradable all-purpose detergents and cleaners
  - Laboratory grade alcohol and hydrogen peroxide
  - Fish feed
  - Others TBD

- Utilization of supplies and equipment which prevent, control, and/or treat spills and unplanned discharges and compliance schedule to install any necessary items. Onsite personnel are committed to having and utilizing (at a minimum) the following items:

  - UN approved 55-gallon drum with lever lock
  - Pads
  - Sorbent Socks
  - Pillows
  - Nitrile Gloves
  - Emergency Handbook
  - Goggles
  - Disposal Bags

- Develop a reporting system which shall be used to alert responsible facility management and appropriate legal and regulatory authorities.
  - Offsite facility manager = tender vessel captain
  - If not a minor containment, the appropriate USEPA and NOAA Fisheries agencies will be notified as soon as possible and within twenty-four (24) hours.
- All petroleum products and other hazardous materials will be stored in durable, impervious containers which are clearly labeled to indicate their contents.
- Fuel used for boat and small engine operation shall be stored in U.S. Coast Guard-approved containers.
- The Velella Epsilon Project personnel will undertake actions to limit and prevent the spreading of the discharge to the waters of the United States. Prevention is the Best Solution; should a spill occur the following actions will be prioritized:
  - Communicate the hazard
  - Control the spill
  - Contain the spill
  - Clean up the spill and any damage
- Cleanup efforts will commence immediately and be completed as soon as possible, taking precedence over normal work, and include the proper disposal of any spilled materials and used cleanup materials (Appendix A, Appendix B, and Appendix C).
- Chemical wastes and spilled chemicals shall be properly stored until removal from the mariculture facility can be coordinated and disposed of at an approved facility.
- Farm support vessels will have appropriately sized and approved Marine Sanitation Devices (MSD) on board.
- All human wastes will be disposed of according to applicable Florida State and Federal regulations.

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3.0 Maintenance

The Velella Epsilon project personnel will ensure that all equipment is maintained in proper operational condition by:

- Performing routine maintenance inspections (i.e., visual, camera, diver-assisted) of the net pen array system to identify and promptly repair any damage to:
    - Coppernet and bird/fish containment netting
    - Mooring lines, cables, and chains
    - Embedment anchors
    - Buoys, lines, markers, and lights
    - Tender and operational vessel equipment and systems (i.e., generation, refrigeration)
    - Communications equipment and networks
- Regularly conducting maintenance of the net pen array system in order to ensure that it is properly functioning.
    - Repairs to all above items (Appendix D and Appendix E).
    - Special attention will be given to connectors and rope/chain interfaces. Chafe points will be identified inspected, and biofouling removed.
    - Operators will inspect and adjust mooring systems prior to and immediately following a tropical storm or hurricane.
    - Operators will; however, consider the relative health and safety risks and benefits associated with the inspection methods utilized.
    - Shackles used in mooring systems will be either safety shackled, wire-tied, or welded to prevent pin drop-out.
- The Velella Epsilon Project personnel will ensure that all nets, mooring and rigging lines, and anti-predator equipment will be stretched tight/taut and maintained in a manner to diminish the likelihood of entangling finfish, sea birds, marine mammals, and sea turtles.
- The captain will ensure that all vessels have an implemented Standard Operating Procedure (SOP).

4.0 Feed Management & Monitoring

The Velella Epsilon project personnel will ensure that optimal and efficient feed management & monitoring practices are adhered to by:

- Efficient feed management and feeding strategies will be employed that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth.

- Feed storage, handling, and delivery methods will be operated to minimize waste and the creation of fine particles of feed.
- Feed conversion ratio records will be maintained by using feed and fish biomass inventory tracking systems (Appendix F).
- Nutrient and solids discharges will be minimized through optimization of efficient feed formulations. Use formulations designed to enhance nitrogen and phosphorus retention efficiency, and reduce metabolic waste output.
- Feed manufacturer labels, or copies thereof, will be retained for the prior two years of operation. Labels will be made available for review during compliance inspections.
- Use efficient feeding practices, monitor active feed consumption, and reduce feed loss. The appropriate quantity and type of feed for a given species is influenced by fish size, water temperature, dissolved oxygen levels, health status, reproductive status, and management goals. Feed particle size should be appropriate for the size of fish being fed. Feeding behavior must be observed to monitor feed utilization and evaluate health status.
- Feeding equipment will be maintained and properly operated.
- Employee training in fish husbandry and feeding methods will be conducted to ensure that workers have adequate training to optimize feed conversion ratios.
- Wherever practical, interactive feedback feeding systems such as video, "lift-ups," Doppler, sonar, infrared, or equivalent methods will be used to monitor feed consumption, and reduce feed waste.
- The feeding of wet feeds (ground or whole fish or shellfish and other raw meat or plant materials) will not be conducted.
- When and if feasible, accumulation of uneaten feed beneath the pens will be minimized through active feed monitoring and approved/permitted management strategies.
- Physical disturbance of the bottom such as harrowing, dragging or other mechanical means will never be used to mitigate the benthic impacts of feed or fish excretion.

5.0 Escape Management

The Velella Epsilon project personnel will ensure that optimal escape management & monitoring practices are adhered to primarily via genetic compatibility and prevention:

5.1 Genetic Compatibility

- The Velella Epsilon Project specifically selected the farming production of the Almaco Jack (Kampachi; *Seriola rivoliana*,) as it is a wild, native species indigenous to the Gulf of Mexico.
- Fingerlings will be obtained from the Mote Aquaculture Park, Sarasota, Florida, or the RSMAS, University of Miami. Each of these facilities have obtain a Special Activity License (SAL) from the Florida Fish and Wildlife Conservation Commission for the collection of wild broodstock

pursuant to Rule Chapter 68B-8, F.A.C., Aquaculture Broodstock Collection Special Activity License.

- Further, broodstock were collected from the offshore waters of Madeira Beach, Florida, which is in proximity to the Velella Epsilon Demonstration farm site.
- Only F1 generation fingerlings are being used, which will have the same approximate genetic composition as any wild, native kampachi within the Gulf of Mexico.
- Velella Epsilon management will maintain documentation identifying the source of all fingerlings and adult fish for at least two years. These records will be available for inspection by EPA, USACE, NOAA, and FDACS staff upon request.
- Velella Epsilon management will prohibit any intentional release of stock into the native waters surrounding the netpen array.
- Velella Epsilon management will report, within 24 hours, any escape to EPA, USACE, NOAA, and FDACS. The report will include species identification, approximate size and number of fish, and location (Appendix G).

5.2 Escape Prevention

- The Velella Epsilon Project is committed to using Coppernet netting, which serves as a superior predator barrier net while providing long-term life cycle durability.
- Loss-control procedures are designed to address the principle causes of escape (equipment failure, operational errors, and predator attacks) and include:
    - Maintaining optimal equipment and operating standards,
    - Implementation of immediate emergency repairs, and
    - Implementation of escape recovery actions.
- Fish transfers such as stocking, grading, transfer, or harvest will be conducted in appropriate weather conditions and under constant visual supervision.
- Such equipment will be designed appropriately.
- Shields or additional netting will be used to prevent stray fish from escaping during transfer.
- The harvesting and transportation systems will be designed, operated, and maintained appropriately to prevent escapes.
- The Velella Epsilon net pen was designed with specifications and appropriate installation to be commensurate with the prevailing conditions of the proposed offshore site and capable of withstanding the maximum weather and sea conditions.
- Jump nets will be installed that are the appropriate height for adult kampachi to prevent stock from jumping out of the primary netpen system.
- Nets will be secured to the cage collar so that the collar bears the strain of the net weight and not the handrail of the net pen.

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- Bird netting will be installed to cover the net pen to reduce the risk of escape due to bird predation. Bird nets will be constructed using appropriate materials and mesh sizes designed to reduce the risk of bird entanglement.
- Vessel operations around the net pen array will follow the captains SOPs to ensure safety to the net pen and mooring infrastructure so as to avoid damages that may cause escapes.

6.0 Waste Collection & Disposal, Transport or Harvest Discharge, and Carcass Removal

The Velella Epsilon project personnel will ensure that optimal waste collection and disposal, transport or harvest discharge, and carcass removal practices are adhered to by:

6.1 Waste Collection & Disposal

- All feed bags, packaging materials, waste rope, buoy and mooring line, worn structural components, and netting will be collected and properly stored on the tender vessel, and returned to shore and properly dispose of.
- Recycling of any material or equipment components will be strongly considered.
- Personnel will avoid the discharge of substances associated with in-place net cleaning.
    - Gear and management strategies will be implemented to reduce biofouling that will minimize or eliminate the need for onsite net cleaning.
- These strategies may include the use of fouling resistant materials (e.g., copper alloy netting), net changing, rotating cage designs, or the application of antifouling coatings.
    - The Velella Epsilon Project is already committed to using Coppernet netting.
    - Mechanical cleaning will include practices that prevent the accumulation of solids on the sea floor or the release of solids that cause or contribute to water quality impairment.
    - Use of biocidal chemicals for cleaning nets onsite will be prohibited.
- The captain will ensure that all farm vessels and equipment are properly operated and maintained to minimize leaks, spills, or waste loss.
- The Velella Epsilon operation will provide employees with approved marine sanitation devices aboard vessels and/or working platforms.

6.2 Transport or Harvest Discharge and Carcass Removal

- Discharge associated with transport or harvesting of aquatic animals (including blood, viscera, carcasses, or transport water containing blood) will be minimized through proper containment and disposal at an appropriate shore based facility.
    - Any such material and liquids will be properly stored in plastic bags within sealed containers on the tender vessel until the next opportunity for transport back to shore.

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- Liquid and biological wastes will be either refrigerated or frozen in plastic bags within sealed containers on the tender vessel until the next opportunity for transport back to shore.
- Carcasses from mortalities will be routinely (when observed) removed from the net pen system will be either refrigerated or frozen in plastic bags within sealed containers on the tender vessel until the next opportunity for transport back to shore (Appendix H).
- Mortalities will be disposed of and notification given in accordance with Disposal of Dead Animals BMPs.
- Clean harvest methods will be employed which includes offsite processing at shore based seafood distribution facilities.

7.0 Health Management

The Velella Epsilon project personnel will ensure that the following health management procedures are implemented in order to prevent and minimize the indirect transfer or discharge of aquaculture pathogens.

- Velella Epsilon staff will maintain documentation identifying the source of all eggs, fry, fingerlings, and adults.
- The stocking of *Seriola rivoliana* will be accompanied by an Official Certificate of Veterinary Inspection signed by a licensed and accredited veterinarian attesting to the health of the organisms to be stocked (i.e., via Mote Aquaculture Park and/or RSMAS management).
- Source hatcheries will minimize cross-contamination between groups/lots of organisms through cleaning and disinfection of equipment and biosecurity practices.
- Source hatcheries will implement quarantine/isolation or disinfection procedures to reduce the risk of pathogen translocation to the offshore site.
- Velella Epsilon staff will proactively manage the culture *Seriola rivoliana*, any subsequent pathogens, and the site environment to optimize conditions for growth and health.
- Velella Epsilon staff will implement strategies to prevent and/or mitigate risk factors which adversely impact animal health.
- Velella Epsilon staff will monitor for, and identify any pathogens and non-infectious (parasites) issues of concern.
    - Pathology assessments and visual inspections will be conducted daily on sample fishes (healthy and mortalities).
    - All pathogens and parasites will be identified and cataloged for reference and treatment.
    - Although the use of drugs are not anticipated during offshore net pen farming operations, the Velella Epsilon staff will ensure proper use of drugs or treatments for the control of pathogens or parasites.
    - Only U.S. Food and Drug Administration (FDA) "Approved Drugs for Use in Aquaculture" (July 2020) will be considered.

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- The Velella Epsilon (MAS) mooring system was specifically engineered and designed to enable the cage system to adjust to the currents and prevailing winds, and thus rotate around the MAS (in a watch-like circle) while at the surface and when submerged.
    - This motion ensures that there is a consistent a defined fore and aft of the net pen, thus reducing potential for proliferation of any ectoparasites
    - This serves as an effective management practice for minimizing parasitic infestation or re-infestation (such as *Neobenedenia* skin flukes).
- Velella Epsilon staff will notify their aquatic animal health professional and the Florida Department of Agriculture and Consumer Services (FDACS), Division of Animal Industry, State Veterinarian's Office in the event of a suspected or diagnosed outbreak of a State or Federal notifiable disease or pathogen at (850)-410-0900, or after hours at 1-800-342- 5869, or by email at RAD@FreshFromFlorida.com.
- Health management records will be made a component of the farm records and include behavioral changes, other clinical signs of disease, treatment procedures, and unusual morbidity and mortality events. These records must be retained for at least two years and will be made available for inspection upon request.
- Velella Epsilon staff will implement the requirements of FDACS Chapter XIII Health Management, Chapter XVII Aquaculture Chemical and Drug Handling, and Chapter XVIII Aquatic Animal Welfare into their procedures and practices.

8.0 Record Keeping

The Velella Epsilon project personnel will ensure that accurate and timely record keeping is conducted, reviewed, and made available to all personnel, EPA, USACE, NOAA, and FDACS staff.

- Velella Epsilon staff will keep and analyze records related to feeding, chemical use, water quality, weather conditions, fish culture operations, and inventory to facilitate improvements in the efficiency of farm input use.

- Velella Epsilon staff will keep and analyze records related to feed amounts and estimates of the numbers and weights of stock in order to calculate representative feed conversion ratios (Appendix A).

- Velella Epsilon staff will keep and analyze records related to net pen changes, inspections, and repairs (Appendix B).

- The following additional observations will be routinely made:

    - Routine surveys and records of marine debris generated by the operation.

    - Routine assessments of aquatic animal health monitoring, management, and reporting.

    - Impacts to wildlife through escapement, entanglement, and other interactions.

    - Monitoring of any environmental response to implementation of BMPs to ensure that the anticipated outcomes are achieved.

    - Recreational and commercial use and interactions.

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9.0 Training

The Velella Epsilon management will ensure that all relevant personnel are trained in spill prevention and appropriate procedures for responding in the event of a spill to ensure proper clean-up and disposal of spilled materials. Such training may include online courses:

- Spill Prevention, Control, and Countermeasure (SPCC) for Agriculture
- PCC Rule: Train-the-Trainer Package for the Agriculture Sector
    - https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations/spcc-rule-train-trainer-package-agriculture

The Velella Epsilon management will ensure that all relevant personnel are trained on proper operation and cleaning of production systems, including feeding procedures and equipment.

- Such training will occur as an "onboarding" session upon boarding the vessel and the net pen array site.

10.0 Department of Defense (DoD) Mitigation Measures / Stipulations

The Velella Epsilon management will ensure that all relevant personnel are responsible for carrying out the specific mitigation measures outlined below, which provide guidance on how to follow the requirements of lease stipulations that are appropriate and similar to, those outlined in the Bureau of Ocean Energy Management (BOEM), Eastern Gulf of Mexico Planning Area (EPA), Gulf of Mexico Outer Continental Shelf (OCS), Oil and Gas Lease Sale 226 (03/23/2016) - *Lease Stipulations.*

10.1 Stipulation No. 1 - Military Areas

The Eglin Gulf Test and Training Range (EGTTR) is composed of Warning Areas 151, 168, 174, and 470 plus the individual Eglin Water Test Areas (EWTAs) 1 through 6. The Warning Areas and EWTAs only include the airspace. There are no restrictions on public or commercial use of the surface waters. These areas are restricted to DoD use except when the airspace-controlling agency either authorizes joint use or turns the airspace back over to Federal Aviation Administration (FAA) control. A Warning Area restricts all public and commercial use of the airspace due to the hazardous nature of military testing and training.

10.1.1 Hold and Save Harmless

Whether compensation for such damage or injury might be due under a theory of strict or absolute liability or otherwise, Ocean Era, Inc. assumes all risks of damage or injury to persons or property that occur in, on, or above the OCS, and to any persons or to any property of any person or persons who are agents, employees, or invitees of Ocean Era, Inc., its agents, independent contractors, or subcontractors doing business with Ocean Era, Inc. in connection with any activities being performed by Ocean Era, Inc. in, on, or above the OCS, if such injury or damage to such person or property occurs by reason of the activities of any agency of the United States (U.S.) Government, its contractors or subcontractors, or any of its officers, agents, or employees, being conducted as a part of, or in connection with, the programs and activities of the command headquarters listed below.

Ocean Era, Inc. further agrees to indemnify and save harmless the U.S. Government against all claims for loss, damage, or injury sustained by Ocean Era, Inc., or to indemnify and save harmless the U.S. Government against all claims for loss, damage, or injury sustained by the agents, employees, or invitees of Ocean Era, Inc., its agents, or any independent contractors or subcontractors doing business with Ocean Era, Inc. in connection with the programs and activities of the U.S. Government, whether the same be caused in whole or in part by the negligence or fault of the U.S. Government, its contractors, or subcontractors, or any of its officers, agents, or employees and whether such claims might be sustained under a theory of strict or absolute liability or otherwise.

10.1.2 Electromagnetic Emissions

Velella Epsilon management agrees to control its own electromagnetic emissions and those of its agents, employees, invitees, independent contractors, or subcontractors emanating from individual designated defense warning areas in accordance with requirements specified by the 96 Test Wing Technical Advisor to the degree necessary to prevent damage to, or unacceptable interference with, DoD flight, testing, or operational activities conducted within individual designated warning areas. Necessary monitoring control and coordination with the Velella Epsilon management, its agents, employees, invitees, independent contractors, or subcontractors will be effected by the commander of the appropriate onshore military installation conducting operations in the particular warning area, provided, however, that control of such electromagnetic emissions will in no instance prohibit all manner of electromagnetic communication during any period of time between Ocean Era, Inc., its agents, employees, invitees, independent contractors, or subcontractors, and onshore facilities.

10.1.2 Operational

Prior to initiating operations that require a boat, ship, or aircraft traffic, and prior to commencing such traffic in the individual designated warning areas, Velella Epsilon management will develop and submit a schedule of typical vessel routes and timing of such routes to the commander of Air Force Test Center (AFTC). Such a schedule will provide AFTC with a reasonable understanding of the boats, ships, and aircraft traffic operating in the warning areas. Velella Epsilon management will provide routine updates to the schedule of operations and vessel traffic when significant changes are anticipated to occur.

Warning and Water Test Areas	**Command Headquarters**
Eglin Water Test Areas 1, 2, and 3 (The VE Project is sited in WTA-2B)	Air Force Test Center (AFTC) Attention: 96 Test Wing Technical Advisor Mr. Ed Utt or Mr. Chris Smith 96 TW/CZ 101 West "D" Avenue, Suite 116 Eglin AFB, Florida 32542-5492 Telephone: (850) 882-5622

10.2 Stipulation No. 2 - Evacuation

Velella Epsilon management, recognizing that the VE Demonstration Farm deployment, operation, production, harvest, abandonment, and site cleanup activities on the permitted area of submerged lands may occasionally interfere with tactical military operations, hereby recognizes and agrees that the U.S. reserves and has the right to temporarily suspend operations and/or require evacuation on the permitted area in the interest of national security. Such suspensions are considered unlikely in this area. Every effort will be made by the appropriate military agency to provide as much advance notice as

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possible of the need to suspend operations and/or evacuate. Advance notice of fourteen (14) days normally will be given before requiring a suspension or evacuation, but in no event will the notice be less than four (4) days. Temporary suspension of operations may include the evacuation of personnel and appropriate sheltering of personnel not evacuated. Appropriate shelter means the protection of all project personnel for the entire duration of any DoD activity from flying or falling objects or substances; it will be implemented by a written order after consultation with the appropriate command headquarters or other appropriate military agency or higher authority. The appropriate command headquarters, military agency, or higher authority will provide information to allow the Velella Epsilon management to assess the degree of risk to, and provide sufficient protection for, the Velella Epsilon's personnel and property. Such suspensions or evacuations for national security reasons normally will not exceed seventy-two (72) hours; however, any such suspension may be extended by order of the 96 Test Wing Technical Advisor. During such periods, equipment may remain in place, but all operations, if any, must cease for the duration of the temporary suspension if the 96 Test Wing Technical Advisor so directs. Upon cessation of any temporary suspension, the 96 Test Wing Technical Advisor immediately will notify the Velella Epsilon management that such suspension has terminated and operations on the leased area can resume.

Velella Epsilon management will inform the 96 Test Wing Technical Advisor of the persons/offices to be notified to implement the terms of this stipulation.

Velella Epsilon management will establish and maintain early contact and coordination with the 96 Test Wing Technical Advisor in order to avoid or minimize the effects of conflicts with potentially hazardous military operations.

Velella Epsilon management understands that they are not entitled to reimbursement for any costs or expenses associated with the suspension of operations or activities or the evacuation of property or personnel in fulfillment of the military mission in accordance with the above subsections. Notwithstanding this understanding, however, Velella Epsilon management reserves the right to seek reimbursement from appropriate parties for the suspension of operations or activities, or the evacuation of property or personnel, associated with conflicting commercial operations.

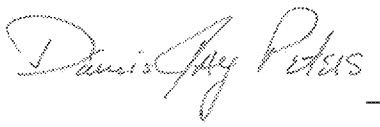
10.3 Stipulation No. 3 – Coordination

The Velella Epsilon management will consult with AFTC regarding the location, density, and planned periods of operation of the VE Project array, and to maximize operations while minimizing conflicts with DoD activities. If determined necessary by the 96 Test Wing Technical Advisor, the Velella Epsilon management will consider a formal agreement with AFTC, which delineates the specific requirements and operating parameters for their activities in accordance with the other military stipulation clauses contained herein. Moreover, if there is a serious threat of harm or damage to life or property, or if it is in the interest of national security or defense, pending or approved operations may be suspended or halted. AFTC will attempt to minimize such suspensions within the confines of related military requirements.

Velella Epsilon management will establish and maintain early contact and coordination with the 96 Test Wing Technical Advisor in order to avoid or minimize the effects of conflicts with potentially hazardous military operations.

11.0 BMP Review & Endorsement

We, the Velella Epsilon management, Machias Captain, and the individuals responsible for implementing the BMP plan, have reviewed and endorsed this BMP plan.

Velella Epsilon Demonstration Project (Facility Name)	**FL0A00001** (NPDES #)
Dennis Jay Peters (Facility Manager – Printed Name)	
(Other Individual – Printed Name & Title)	(Other Individual – Signature)
(Other Individual – Printed Name & Title)	(Other Individual – Signature)
(Other Individual – Printed Name & Title)	(Other Individual – Signature)

12.0 BMP Certification Form

Velella Epsilon Demonstration Project NPDES Permit Number: FL0A00001

Printed Name: Dennis Jay Peters

Title (owner, operator, etc.): Operations Manager

Date the BMP Plan was developed: November 9, 2020

I certify that a BMP plan was developed for: Velella Epsilon Demonstration Project

(Name of facility)

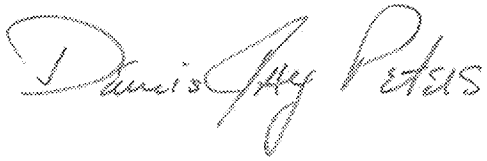
A copy of the BMP plan is available for inspection at the following address:

Ocean-Era, Inc.

Hale Iako, Room 202

73-970 Makako Bay Drive

Kailua-Kona, HI 96740

Signature:  Date: November 9, 2020

APPENDIX A

24 Hour Spill Reporting Log

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CHECKLIST FOR ORAL REPORT OF SPILLS OF DRUGS, PESTICIDES, AND FEED (PROVIDE AN ORAL REPORT TO YOUR PERMITTING AUTHORITY WITHIN 24 HOURS OF ANY SPILLS OF DRUGS, PESTICIDES, OR FEED)

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

Reported to Permitting Authority?	Name of Material Spilled (Drugs, Pesticides, or Feed)	Quantity Spilled	Date of Spill	Date Oral Report Submitted to Permitting Authority	Initials
❑					
❑					
❑					
❑					
❑					
❑					
❑					
❑					

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APPENDIX B

7 Day Spill Reporting Log

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WRITTEN REPORT FOR SPILLS OF DRUGS, PESTICIDES, AND FEED (PROVIDE AN ORAL REPORT TO YOUR PERMITTING AUTHORITY WITHIN 7 DAYS OF ANY SPILLS OF DRUGS, PESTICIDES, OR FEED)

Name of person submitting this form:_____

Date this written report was submitted to the permitting authority:_____

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

NAME OF MATERIAL SPILLED (DRUGS, PESTICIDES, OR FEED)	QUANTITY SPILLED	WHERE SPILLED AND ACTION TAKEN	DATE SPILLED

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APPENDIX C

Spills & Leaks Reporting Log

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SPILLS AND LEAKS LOG

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

Date (mm/dd/yy)	Spill or Leak	Location (as indicated on a site map)	Type of Material & Quantity	Source (if known)	Reason	Amount of Material Recovered	List of Preventative Measures Taken	Initials

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APPENDIX D

Maintenance Reporting Log

ED_013354_00000604-00028

MAINTENANCE REPORTING LOG

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

Date Inspected	Inspector Initials	Notes (Note any problems found and maintenance performed)	Date Maintenance Performed

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APPENDIX E

Failure or damage
To the structure of containment systems

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WRITTEN REPORT FOR FAILURE OR DAMAGE TO THE STRUCTURE OF CONTAINMENT SYSTEMS

(Submit a written report to your permitting authority within 7 days of discovery of the failure or damage)

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

NAME OF PERSON SUBMITTING THIS FORM: _____

DATE THIS WRITTEN REPORT WAS SUBMITTED TO THE PERMITTING AUTHORITY: _____

Cause of the Failure or Damage	Date Failure or Damage was Discovered	Time Elapsed Until the Failure or Damage was Repaired	Materials Released to the Environment from the Failure or Damage (Estimate)	Steps Being Taken to Prevent Reoccurrence

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APPENDIX F

Feed Conversion Reporting Log

FEED CONVERSION RATIOS LOG
NET PEN SYSTEM

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

$$\frac{\text{Dry weight of feed applied}}{\text{Wet weight of fish gained}}$$

Date (start date end date)	Description of Group	Total Feed Amounts (Estimate)	Weights of Animals (start weight end weight)	Weight Gained	Calculated FCR

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APPENDIX G

Escape Reporting Log

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ESCAPE REPORTING LOG

(Submit a written report to your permitting authority within 24 hours of discovery of the failure or damage)

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

NAME OF PERSON SUBMITTING THIS FORM:_____

DATE THIS WRITTEN REPORT WAS SUBMITTED TO THE PERMITTING AUTHORITY:_____

Cause of the Failure or Damage	Date Failure or Damage was Discovered	Time Elapsed Until the Failure or Damage was Repaired	Number and Size of Incidental Stock Escape (Estimate)	Steps Taken to Recapture Stock

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APPENDIX H

Carcass Removal Reporting Log

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CARCASS REMOVAL LOG

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

Date	Initials	System/Group of Animals	# of Mortalities	Approx. Weight	Disposal Method	Notes

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APPENDIX I

Employee Training Reporting Log

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EMPLOYEE TRAINING LOG

Velella Epsilon Demonstration Project NPDES Permit Number: **FL0A00001**

Employee Training	Completed By: _____ Title: _____ Date: _____

Instructions: Describe the employee-training program for your facility below. The program should, at a minimum, address spill prevention and response, and proper operation and cleaning of production and wastewater treatment systems. Provide a schedule for the training program and list the employees who attend the training sessions.

Training Topics	Brief Description of the Training Program and Materials	Schedule for Training (list dates)	Participants
Spill Prevention and Response			
Operation and Cleaning of Systems			
Feeding Procedures			
Other Topics (list):			
Other Topics (list):			

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